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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/056,192

01/23/2002

Glenn W. Gengel

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7590

03/22/2006

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EXAMINER

PIZARRO CRESPO, MARCOS D

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,192

Applicant(s)

GENGEL ET AL.

Examiner

Marcos D. Pizarro-Crespo

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22,37-60,99-102 and 105-111 is/are pending in the application.
- 4a) Of the above claim(s) 4,10-21,39,42-47,49-55,99-102 and 108-110 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9,22,37,38,40,41,48,56-60,105-107 and 111 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-22,37-60,99-102 and 105-111 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. /. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/23/2002</u> . | 6) <input type="checkbox"/> Other: _____. |

Attorney's Docket Number: 03424P056

Filing Date: 1/23/2002

Claimed Foreign Priority Date: none

Applicant(s): Gengel et al.

Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the election filed on 2/27/2006.

Acknowledgment

1. The amendment filed on 2/27/2006, responding to the Office action mailed on 1/24/2006, has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-22, 37-60, 99-102, and 105-111.

Election/Restrictions

2. Applicants' election of Invention I/Species 1 in the reply filed on 1/18/2006 is acknowledged. Because the applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). In their reply, the applicants indicated that claims 1-3, 5-9, 20, 22, 37, 38, 40, 41, 45, 48, 56-60, 105-107, and 111 read on the elected Invention/Species. As indicated in their reply, claims 1, 37, and 111 are generic to Species 1-8, whereas claims 20 and 45 are generic to species 4 and 5; therefore, claims 20 and 45 do not read on elected Species 1. Accordingly, claims 4, 19-21, 39, 42-47, 99-102, and 108-110 are withdrawn from further consideration pursuant to 37

CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

4. Claims 5, 6, 22, 38, and 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 5, 6, and 56 contain the trademark/trade name NanoBlock™. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe an integrated circuit and, accordingly, the identification/description is indefinite.

6. Claims 22 and 38 recite the limitation "the substrate". It is not clear to which one of the previously recited substrates, *i.e.*, the first substrate and the second substrate, is the limitation making reference to.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 5, 6, 37, 40, 41, 48, 60, 105, and 111 are rejected under 35 U.S.C. 102(e) as being anticipated by Akita (WO 2001-62517).

9. Regarding claim 1, Akita shows all aspects of the instant invention including an apparatus comprising:

- ✓ A strap **7** including:
 - A first substrate **10** with an opening (see, e.g., fig. 3)
 - An integrated circuit (IC) **4** embedded in the opening and having a conductive pad **21** (see, e.g., fig. 12)
- ✓ A thin-film dielectric layer **36** formed over a portion of the IC **4** and a portion of the first substrate **10** (see, e.g., fig. 12)
- ✓ A conductive medium **11** formed over the thin-film dielectric layer **36** and attached to the conductive pad **21** via a contact hole, the medium **11** having a greater surface area than the pad **21** (see, e.g., fig. 12)

- ✓ A large-scale component **6** attached to the medium **11** and electrically coupled to the IC **4**, the component including a second substrate **2** larger than the first substrate **10** (see, e.g., fig. 2)

10. Regarding claims 2 and 6, Akita shows the component **6** including an antenna on the second substrate **2**, the antenna electrically coupled to the IC **4** directly through the medium **11** (see, e.g., fig. 12).

11. Regarding claims 3, 5, and 41, Akita shows the conductive medium **11** is paste (see, e.g., pp.11/II.19-21).

12. Regarding claim 105, Akita shows that the opening is tapered (see, e.g., pp.10/II.15-24).

13. Regarding claim 37, Akita shows all aspects of the instant invention including an apparatus comprising:

- ✓ A substrate **10** (see, e.g., fig. 12)
- ✓ An integrated circuit (IC) **4** embedded within the substrate **10** (see, e.g., fig. 3)
- ✓ A thin-film dielectric layer **36** formed over a portion of the IC **4** and a portion of the substrate **10** (see, e.g., fig. 12)
- ✓ A conductive medium **11** formed over a portion of the thin-film dielectric layer **36** and in direct electrical connection with the IC **4** (see, e.g., fig. 12)
- ✓ A large-scale component **6** connected to the medium **11**, coupled to the IC **4**, and including a second substrate **2** (see, e.g., fig. 2)

14. Regarding claim 40, Akita shows the apparatus further comprising a large-scale component connected to the medium and electrically coupled to the IC (see, e.g., fig. 2).

15. Regarding claim 48, Akita shows the component is an antenna (see, e.g., fig. 2).
16. Regarding claim 60, Akita shows the component is a substrate having thereon an antenna coupled to the IC directly through the medium (see, e.g., fig. 2).
17. Regarding claim 111, Akita shows the apparatus comprising:
 - ✓ A strap **7** including a first substrate **10** with an IC **4** having a conductive pad (see, e.g., fig. 3)
 - ✓ A thin-film dielectric layer **36** formed over a portion of the IC **4** and a portion of the substrate **10** (see, e.g., fig. 12)
 - ✓ A conductive medium **11** formed over the dielectric layer **36**, attached to the pad via a contact hole, and having a greater surface area than the pad (see, e.g., fig. 12)
 - ✓ A large-scale component **11** attached to the medium **11**, electrically coupled to the IC **4**, and including a second substrate **2** (see, e.g., fig. 2)
18. Claims 1m 7-9, 22, 37, 38, 40, 48, 57-60, and 111 are rejected under 35 U.S.C. 102(e) as being anticipated by Credelle (US 6606247)
19. The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

20. Regarding claim 1, Credelle shows all aspects of the instant invention including an apparatus comprising:

- ✓ A strap **300** including:
 - A first substrate **12** with an opening **21** (see, e.g., fig. 2)
 - An integrated circuit (IC) **1** embedded in the opening and having a conductive pad (see, e.g., fig. 2)
- ✓ A thin-film dielectric layer **31** formed over a portion of the IC **1** and a portion of the first substrate **12** (see, e.g., fig. 2)
- ✓ A conductive medium formed over the thin-film dielectric layer and attached to the conductive pad via a contact hole, the medium having a greater surface area than the pad (see, e.g., fig. 4B and 8B)
- ✓ A large-scale component attached to the medium and electrically coupled to the IC, the component including a second substrate larger than the first substrate (see, e.g., figs. 3 and 8B)

21. Regarding claim 7, Credelle shows the IC is suitable for use with radio frequency applications (see, e.g., col.3/ll.21).

22. Regarding claim 8, Credelle shows the component is a substrate having thereon an antenna electrically coupled to the IC directly through the conductive medium (see, e.g., fig. 3).

23. Regarding claim 9, Credelle shows the IC includes a circuit suitable to control an electronic display (see, e.g., col.3/ll.18-19).

24. Regarding claim 22, Credelle shows the substrate is of a flexible material.

25. Regarding claim 37, Credelle shows all aspects of the instant invention including an apparatus comprising:

- ✓ A substrate **12** (see, e.g., fig. 2)
- ✓ An integrated circuit (IC) **1** embedded within the substrate **12** (see, e.g., fig. 2)
- ✓ A thin-film dielectric layer **31** formed over a portion of the IC **1** and a portion of the substrate **12** (see, e.g., fig. 2)
- ✓ A conductive medium formed over a portion of the thin-film dielectric layer and in direct electrical connection with the IC (see, e.g., figs. 4B and 8B)
- ✓ A large-scale component connected to the medium, coupled to the IC, and including a second substrate (see, e.g., fig. 3 and 8B)

26. Regarding claim 38, Credelle shows the first substrate is of a flexible material (see, e.g., col.3/ll.38).

27. Regarding claim 40, Credelle shows the apparatus further comprising the component connected to the conductive medium and electrically coupled to the IC (see, e.g., figs. 3 and 8B).

28. Regarding claim 48, Credelle shows (see, e.g., fig. 3) the component is an antenna.

29. Regarding claim 57, Credelle shows the IC is a display driver (see, e.g., col.3/ll.18-19).

30. Regarding claim 58, Credelle shows the IC is a radio frequency identification circuit (see, e.g., col.3/ll.21).

31. Regarding claim 59, Credelle shows the IC is suitable for use with radio frequency applications (see, *e.g.*, col.3/ll.21).

32. Regarding claim 60, Credelle shows the component is a substrate **310** having thereon an antenna **311** and the antenna being electrically coupled to the IC through the conductive medium (see, *e.g.*, fig. 3).

33. Regarding claim 111, Credelle shows the apparatus comprising:

- ✓ A strap **300** including a first substrate **12** with an IC **1** having a conductive pad (see, *e.g.*, fig. 2)
- ✓ A thin-film dielectric layer **31** formed over a portion of the IC **1** and a portion of the substrate **12** (see, *e.g.*, fig. 2)
- ✓ A conductive medium formed over the dielectric layer, attached to the pad via a contact hole, and having a greater surface area than the pad (see, *e.g.*, fig. 4B and 8B)
- ✓ A large-scale component attached to the medium, electrically coupled to the IC, and including a second substrate (see, *e.g.*, figs. 3 and 8B)

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

36. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akita.

37. Regarding claim 8, although Akita teaches about the importance of the conductive medium (see, e.g., pp.6/11.3-11), he fails to specify the thickness of it. The specification, on the other hand, also fails to provide teachings about the criticality of having a conductive medium with the claimed thickness. In general, thickness differences will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such thickness is critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the workable ranges by routine experimentation". *In re Aller*, 220 F.2d 454,456,105 USPQ 233, 235 (CCPA 1955). Although Akita teaches about the importance of his conductive medium, he fails to specify the thickness of it.

The specific claimed thicknesses for the conductive medium, i.e., about 1 micron or less, absent any criticality, are only considered to be the "optimum" thicknesses disclosed by Akita that a person having ordinary skill in the art would have been able to determine using routine experimentation based, among other things, on the desired adhesive strength, manufacturing costs, etc. (see Boesch, 205 USPQ 215 (CCPA

1980)), and since neither non-obvious nor unexpected results, *i.e.*, results which are different in kind and not in degree from the results of the prior art, will be obtained as long as a conductive medium is used, as already suggested by Akita.

Accordingly, since the applicants have not established the criticality (see next paragraph below) of the claimed thicknesses, it would have been obvious to one of ordinary skill in the art to use these values in the device of Akira.

CRITICALITY

38. The specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

39. Claim 107 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akita in view of Fjelstad (US 6211572).

40. Regarding claim 107, Akita shows most aspects of the instant invention (see, *e.g.*, paragraph 9 above). As set forth above, Akita also shows a film dielectric layer (see, *e.g.*, fig. 12). Although he specifies that his dielectric layer comprises an epoxy resin (see, *e.g.*, pp.14/II.8-14), he fails to specify that it may also comprise silicon dioxide. Fjelstad (see, *e.g.*, col.5/II.49-54), on the other hand, teaches silicon dioxide to be an equivalent material to Akita's epoxy resin.

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to use either silicon dioxide or an epoxy resin in Akita's apparatus because these were recognized in the semiconductor art for their use as dielectric materials, as taught by Fjelstad, and the selection of any of these known equivalents would be within the level of ordinary skill in the art.

Conclusion

41. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

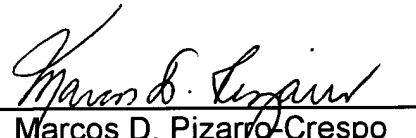
42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(571) 272-1716** and between the hours of 10:00 AM to 8:30 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (571) 272-1705.

43. Any inquiry of a general nature or relating to the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2814

44. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/678-786	3/16/2006
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	3/16/2006


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MDP/mdp
March 16, 2006